

Table 5 - Comparative Ultimate Test Values

Composite Description	Density	Plastic %	Bending Strength (MOR)	Bending Stiffness (MOE)
Cement Fiber Board (HardiBacker - 1/4" thick) ⁴	94 pcf	-----	2100 psi (2550 psi) ⁸	570 ksi ⁸
Portland Cement Board (WonderBoard - 1/4" thick) ⁸	98 pcf	-----	>1500 psi (2780 psi) ⁸	335 ksi ⁸
Portland Cement Board (WonderBoard - 1/2" thick) ⁸	72 pcf	-----	>900 psi	N.A.
USDA, Forest Product Laboratory, melt blended HDPE and hammer-milled random oriented juniper chips, no additives ⁵	52 pcf	30%	3060 psi	226 ksi
INVENTION - Composite HDPE and parallel orientated, zoned, Juniper particles, no additives ⁶	52 pcf	40%	4620 psi	530 ksi
INVENTION - Composite HDPE and random placed Juniper wood particles, no additives ¹⁰	52 pcf	50%	3200 psi	340 ksi
INVENTION - Composite HDPE and random placed Juniper particles, 2% MAPP ¹⁰	52 pcf	50%	5100 psi	510 ksi
Trex TM Composite, 50% PE, 50% wood (dust sized particles), extruded, no additives ⁷	62 pcf	50%	1420 psi	175 ksi
Strandex TM Composite, 50% PE, 50% wood (dust sized particles), extruded, cross-linking additive ⁸	68 pcf	50%	2100 psi	504 ksi
Strandex TM Composite, 50% PVC, 50% wood (dust sized particles), extruded, plasticizer additive ¹²	85 pcf	50%	5350 psi	945 ksi
Oriented Strand Board ⁹	45 pcf	5-10%	3500 psi	950 ksi
Medium Density Fiberboard ¹³	45 pcf	5-10%	3480 psi	350 ksi
Particle Board (M2) ¹³	45 pcf	4-10%	2100 psi	320 ksi

⁴Values based on Rycair Inc. internal testing (Report # 5000-99-TR-12-99-01-WR). Published values for 1/4" & 1/2" thick HardiBacker are MOR=2100 psi, 1/4" thick WonderBoard MOR=> 1500 psi, and for 1/2" thick WonderBoard MOR = >900 psi. No MOE values for these products are readily available (see www.jameshardie.com and www.unifxinc.com and appendix).

⁵Values supplied by the USDA, Forest Products Laboratory. For extruded, higher plastic content, and whole tree values see Appendix.

⁶Rycair Inc. internal test reports; Reference Numbers: 3020-95-TR-05-95-01-WR, 3010-98-TR-05-98-01-R/S, 3220-99-TR-12-99-01-WR, 3020-00-TR-02-00-01-WR

⁷Trex decking NER-508 report from www.trex.com

⁸Strandex composite values from www.compstrusion.com/Strandex

⁹Wood Handbook, USDA, Forest Products Laboratory, 1999, Forest Products Society

Exhibit C